

## FTS DOW School Case (DJIA Stocks) Project: Technical Analysis

**Question:** What is the profitability of technical analysis and how does this relate to the weak form of the efficient market hypothesis?

Irwin and Park (Journal of Economic Surveys, 2007) documented the following: *“Among a total of 95 modern studies, 56 studies find positive results regarding technical trading strategies, 20 studies obtain negative results, and 19 studies indicate mixed results. Despite the positive evidence on the profitability of technical trading strategies, most empirical studies are subject to various problems in their testing procedures, e.g. data snooping, ex post selection of trading rules or search technologies, and difficulties in estimation of risk and transaction costs.”*

In this project you will test the weak form of the efficient market hypothesis (EMH) under conditions that do not suffer from these deficiencies, by completing the following five steps:

1. Identify a short term technical trading strategy that you are interested in testing out using any subset of the Dow Jones Industrial Index (DJIA) stocks (see below for an example).
2. Identify stocks from the DJIA stocks that currently generate buy or sell signals given your trading strategy (i.e., are in the market relative to your trading strategy)
3. Implement your technical trading strategy using the Real Time FTS Client. This step controls against the deficiencies raised above in relation to existing technical analysis studies because the strategy is implemented *ex ante* using the real time prices in a manner that you cannot manipulate after the event.
4. Analyze your trading strategies using the reporting capabilities of the real time FTS Client; you can perform further analysis using the “export to Excel” feature of the FTS Real Time Client.
5. Answer the following question: How profitable was your technical trading strategy when implemented *ex ante* using the FTS Real Time Client over the time period tested? Is this result consistent or inconsistent with the weak form of the efficient markets hypothesis? Note: You should first define what the weak form of the EMH is and then compare your realized trading results with what you predict under the weak form of the efficient market hypothesis.

**Example:** There are many technical trading strategies. For this exercise, you should review and assess whether or not a strategy is currently in the market with respect to some subset of the DJIA stocks. Some strategies are always in the market. For example, a simple strategy that is always in the market buys and sells when the  $n$ -day moving average crosses over the slower moving  $(n+m)$ -day moving average. This is always in the market because whenever one trade is exited (say a long position is sold) a new opposite trade is initiated (a short position is taken in the same security). Examples of this strategy may contrast the  $n=100$  to the  $n+m=350$  day averages, or in a short term form the  $n=7$ -to the  $n+m=25$ -trading day moving averages. You can compute these averages for any stock at different financial web sites (the FTS real time client provides automatic links to several popular sites). Even better, you can download historical data and compute the strategy yourself in a spreadsheet.